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## GT-Position IP interface

GT-Position can provide all raw position data as an output on a TCP-IP address. The user must then provide any additional calculations and graphical depictions. Used for applications with 3<sup>rd</sup> party software.

### Setup

Install GT-Commands normally. Set up the measurement scenarios as described in chapter 5 in the manual. You can use any type of scenarios.

- Attach the Master to a USB port on PC.
- Activate the Satellites and the Senders that are going to be used.
- Check that all diodes on the central are on.
- Change the path in the shortcut for GT-Command as described below

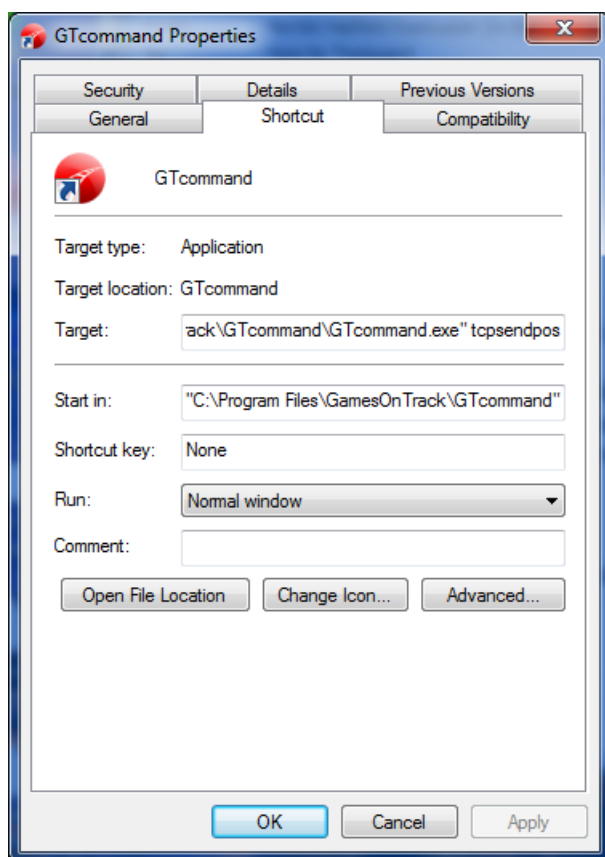
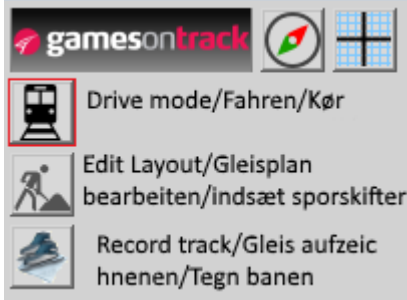


Fig 1: Insert the parameter TCPSendPos in the target line or run GT-command from the command line with the TCPSendPos parameter



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Activate measurements setting the system in Drive mode or Recording mode by starting GT-Command choosing your systemfile.



The GT-Command is streaming data and the application can be minimized

## Port

Data is per default streamed on port 15010

If another port is desired, changing the parameter to TCPSendPos:18000 will provide data on the specific port 18000

## Position data

Data is delivered in a comma-separated string. For every satellite there is an ID, distance and level:

There are never any leading zeros. You can depend on the ',', so your parsing routine should just use a String.Split on that character.

You need to use GTCommand for the calibration and set up everything there. The message interval is the Master setup configuration you have set in GTCommand (usually around 100 ms).

The format looks like this (receiver 1 to N):

```
<RealTimeStampMS>,<TxAddress>,<X>,<Y>,<Z>,<R1Address>,<R1Distance>,<R1Level>,<...>,<...>,<...>,<RNAddress>,<RNDistance>,<RNLevel>
```

<Time> - Milliseconds after start

<Sender ID> - The specific transmitter ID, can be seen on the label

<x> - The x-coordinate in mm

<y> - The y-coordinate in mm

<z> - The z-coordinate in mm is 0 if 2 D scenario.

<Satellite ID> - The specific Satellite ID, can be seen on the label

<Distance> - The measured distance in mm



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<Level> - The level of the measured ultrasound signal at the receiver. From 0-1000, with 0 being the lowest.

An example of a line of strings can be seen below:

```
55924,11000,1190,871,-1435,20104,2059,918,20103,1727,966,20105,1498,999;  
56074,11015,1055,712,-1430,20104,1937,912,20103,1756,922,20105,1312,865;  
56224,11000,1189,873,-1434,20104,2056,917,20103,1726,960,20105,1503,987;  
56374,11015,1052,716,-1430,20104,1930,910,20103,1756,925,20105,1320,860;
```

### ***Test***

The connection can be tested with a program like Hyperterminal in Windows XP, by inserting the IP address and port of the PC running the application.